

022704  
17698

U.S. PTO

PTO/SB/05 (01-04)

Approved for use through 07/31/2006. OMB 0651-0032  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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UTILITY  
PATENT APPLICATION  
TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	P1574
First Inventor	Moon-Hee Sung
Title	Surface Expression Method of... Synthetase
Express Mail Label No.	ER621641978US

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450U.S.P.T.O.  
17497 10/789164  
022704

1.  Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)

2.  Applicant claims small entity status.  
See 37 CFR 1.27.

3.  Specification [Total Pages 28]  
(preferred arrangement set forth below)  
- Descriptive title of the invention  
- Cross Reference to Related Applications  
- Statement Regarding Fed sponsored R & D  
- Reference to sequence listing, a table, or a computer program listing appendix  
- Background of the Invention  
- Brief Summary of the Invention  
- Brief Description of the Drawings (if filed)  
- Detailed Description  
- Claim(s)  
- Abstract of the Disclosure

4.  Informal Drawing(s) (35 U.S.C. 113) [Total Sheets 15]

5. Oath or Declaration [Total Sheets 3]  
a.  Newly executed (original or copy)

b.  Copy from a prior application (37 CFR 1.63(d))  
(for continuation/divisional with Box 18 completed)

i.  DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

6.  Application Data Sheet. See 37 CFR 1.76

7.  CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)

8. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)  
a.  Computer Readable Form (CRF)

b. Specification Sequence Listing on:  
i.  CD-ROM or CD-R (2 copies); or  
ii.  Paper

c.  Statements verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

9.  Assignment Papers (cover sheet & document(s))  
10.  37 CFR 3.73(b) Statement  Power of  
(when there is an assignee)  Attorney  
11.  English Translation Document (if applicable)  
12.  Information Disclosure Statement (IDS)/PTO-1449  Copies of IDS  
Citations  
13.  Preliminary Amendment  
14.  Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)  
15.  Certified Copy of Priority Document(s)  
(if foreign priority is claimed)  
16.  Nonpublication Request under 35 U.S.C. 122  
(b)(2)(B)(i). Applicant must attach form PTO/SB/35  
or its equivalent.  
17.  Other: USPTO Credit Card Payment Form  
Two Deposit Form of Biological Material

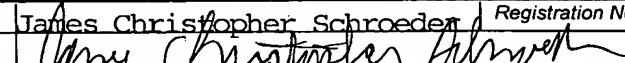
18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

 Continuation       Divisional       Continuation-in-part (CIP)      of prior application No.: .....Prior application information: Examiner \_\_\_\_\_ Art Unit: \_\_\_\_\_  
For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 19. CORRESPONDENCE ADDRESS

 Customer Number: 24,394      OR       Correspondence address below

Name	LaRiviere, Grubman & Payne, LLP		
Address	P.O. Box 3140		
City	Monterey	State	California
Country	USA	Telephone	(831) 649-8800
		Zip Code	93942
		Fax	(831) 649-8835

Name (Print/Type)	James Christopher Schroeder	Registration No. (Attorney/Agent)	48,686
Signature			
		Date	2/27/04

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.  
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# FEE TRANSMITTAL

## for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 443.00)

## Complete if Known

Application Number	Filed Herewith
Filing Date	Filed Herewith
First Named Inventor	Moon-Hee Sung
Examiner Name	Unassigned
Art Unit	Unassigned
Attorney Docket No.	P1574

## METHOD OF PAYMENT (check all that apply)

Check  Credit card  Money Order  Other  None

 Deposit Account:

Deposit Account Number	
Deposit Account Name	

The Director is authorized to: (check all that apply)

Charge fee(s) indicated below  Credit any overpayments  
 Charge any additional fee(s) or any underpayment of fee(s)  
 Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity	Small Entity	Fee Description	Fee Paid
Fee Code (\$)	Fee Code (\$)		
1001 770	2001 385	Utility filing fee	385
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
<b>SUBTOTAL (1)</b>		<b>(\$ 385.00)</b>	

## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims	Fee from below	Fee Paid
Total Claims	22	-20** = 2 X 9 = 18	
Independent Claims	3	-3** = 0 X 0 = 0	
Multiple Dependent			

Large Entity	Small Entity	Fee Description
Fee Code (\$)	Fee Code (\$)	
1202 18	2202 9	Claims in excess of 20
1201 86	2201 43	Independent claims in excess of 3
1203 290	2203 145	Multiple dependent claim, if not paid
1204 86	2204 43	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent
<b>SUBTOTAL (2)</b>		<b>(\$ 18.00)</b>

\*\*or number previously paid, if greater; For Reissues, see above

## 3. ADDITIONAL FEES

## Large Entity Small Entity

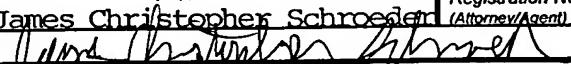
Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing a brief in support of an appeal	
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	40
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

## Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00)

## SUBMITTED BY

Name (Print/Type)	James Christopher Schroeder	Registration No. (Attorney/Agent)	48,686	Telephone	(831) 649-8800
Signature				Date	02/27/04

(Complete if applicable)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

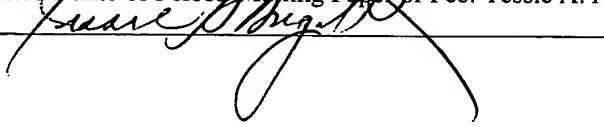
This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Express Mail" mailing label number: ER621641978US  
Date of Deposit: February 27, 2004

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Mail Stop Patent Applications, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Typed or Printed Name of Person Mailing Paper or Fee: Tessie A. Angeles

Signature: 

PATENT  
Docket No. P1574

**IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANTS: MOON-HEE SUNG  
SEUNG-PYO HONG  
JONG-SU LEE  
CHANG-MIN JUNG  
KYUNG-SOO HAHM  
DONG-GUN LEE  
YOON KYUNG PARK  
CHUL-JOONG KIM  
HA-RYOUNG POO

SERIAL NO.: FILED HEREWITH EXAMINER: UNASSIGNED  
FILED: FILED HEREWITH ART UNIT: UNASSIGNED  
FOR: SURFACE EXPRESSION METHOD OF PEPTIDES P5 AND ANAL3  
USING THE GENE ENCODING POLY-GAMMA-GLUTAMATE  
SYNTHETASE

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**MAIL STOP PATENT APPLICATIONS  
COMMISSIONER FOR PATENTS  
P.O. BOX 1450  
ALEXANDRIA, VA 22313-1450**

**TRANSMITTAL LETTER**

Dear Sir:

In connection with the above-referenced matter, transmitted herewith are the following:

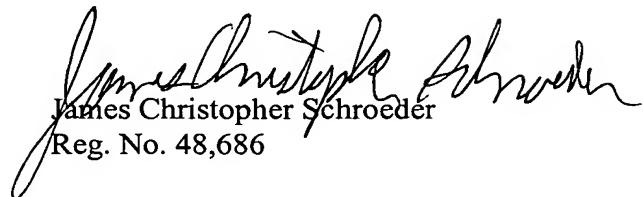
1. Utility Patent Application Transmittal (1 page);
2. Fee Transmittal FY 2004 (1 page);
3. Application Data Sheet (5 pages);

4. Specification (24 pages); Claims (3 pages); and Abstract (1 page);
5. Informal Drawings (15 sheets, 15 figures);
6. Sequence Listing in paper format (3 sheets, 9 sequences);
7. Sequence Listing in Computer Readable Format (1 diskette);
8. Statement Verifying identity of Sequence Listings in both formats (1 page);
9. Deposit Form of Biological Material (2 pages);
10. Declaration and Power of Attorney (3 pages);
11. Recordation Form Cover Sheet (2 pages);
12. Assignment Agreement (2 pages);
13. Information Disclosure Statement (2 pages);
14. Information Disclosure Statement by Applicant Form (2 pages);
15. Reference No. 1 - Enterocins L50A and L50B, Two Novel Bacteriocins from *Enterococcus faecium* L50, are Related to Staphylococcal Hemolysins (8 pages);
16. Reference No. 2 - Peptides from Frog Skin (11 pages);
17. Reference No. 3 -  $\beta$ -sheet Antibiotic peptides as Potential Dental Therapeutics (12 pages);
18. Reference No. 4 - Antibacterial Peptides: Key Components Needed in Immunity (3 pages);
19. Reference No. 5 - Peptide Antibiotics and Their Role in Innate Immunity (33 pages);
20. Reference No. 6 - Antibacterial and Antimalarial Properties of Peptides that are Cecropin-Melittin Hybrids (4 pages);
21. Reference No. 7 - Antibacterial Peptides Designed as Analogs or Hybrids of Cecropins and Melittin (8 pages);
22. Reference No. 8 - Antibacterial Peptide from *H. pylori* (2 pages);
23. Reference No. 9 - Presentation of Two Epitopes of the preS2 Region of Hepatitis B Virus on Live Recombinant Bacteria (7 pages);
24. Reference No. 10 - Outer membrane PhoE Protein of *Escherichia coli* as a Carrier for Foreign Antigenic Determinants: Immunogenicity of Epitopes of Foot-and-Mouth Disease virus (7 pages);

25. Reference No. 11 - Selection of Antibody Ligands from a Large Library of Oligopeptides Expressed on a Multivalent Exposition Vector (10 pages);
26. Reference No. 12 - Targeting Recombinant Antibodies to the Surface of *Escherichia coli*: Fusion to a Peptidoglycan Associated Lipoprotein (4 pages);
27. Reference No. 13 - Transport and Anchoring of  $\beta$ -lactamase to the External Surface of *Escherichia coli* (5 pages);
28. Reference No. 14 - Type 1 Fimbriae of *Escherichia coli* as Carriers of heterologous Antigenic Sequences (10 pages);
29. Reference No. 15 - Surface Display of *Zymomonas mobilis* levansucrase by Using the Ice-nucleation Protein of *Pseudomonas syringae* (5 pages);
30. Reference No. 16 - Expression of Carboxymethylcellulase on the Surface of *Escherichia coli* Using *Pseudomonas syringae* Ice Nucleation Protein (7 pages);
31. Reference No. 17 - Surface-displayed Viral Antigens on *Salmonella* Carrier Vaccine (4 pages);
32. Reference No. 18 -The Normally Periplasmic Enzyme  $\beta$ -lactamase is Specifically and Efficiently Translocated Through the *Escherichia coli* Outer Membrane When it is Fused to the Cell-surface Enzyme Pullulanase (9 pages);
33. Reference No. 19 - Extracellular Transport of Cholera Toxin B Subunit Using *Neisseria* IgA Protease  $\beta$ -domain: Conformation-dependent Outer Membrane Translocation (9 pages);
34. Reference No. 20 - Korean Patent Application No. 10-2000-0078615 (15 pages);
35. Reference No. 21 - Korean Patent Application No. 10-2001-0057837 (16 pages);
36. Reference No. 22 - WO 03/014360 A1 (122 pages);
37. U.S. Patent and Trademark Office Credit Card Payment Form in the amount of \$443.00 in payment of basic filing fee and recordation fee; and
38. Post card in acknowledgment of receipt of all transmitted materials.

Please date-stamp the enclosed post card and return to the undersigned in acknowledgment of receipt of all transmitted materials.

Respectfully submitted,



James Christopher Schroeder  
Reg. No. 48,686

JCS/taa/khg  
February 27, 2004  
LARIVIERE, GRUBMAN & PAYNE, LLP  
P.O. Box 3140  
Monterey, CA 93942  
(831) 649-8800